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# DESCRIPTION

ANTENNA DEVICE, AND METHOD OF MANUFACTURING ANTENNA

DEVICE

This application is a 371 of PCT/JP04/03214 dated  
11 March 2004.  
Technical Field

The present invention relates to an antenna device  
including a so-called loop antenna having a loop shape,  
and a method of manufacturing such an antenna device.

## Background Art

In AV apparatuses in recent years, a switching  
power supply circuit is mounted in many cases for  
reductions in power consumption and size, for example.  
It is known that the switching power supply circuit  
generates switching noises at comparatively high  
frequencies. In addition, in AV digital apparatuses  
represented, for example, by CD players, high-frequency  
noises are generated from digital circuits. In short, in  
the AV apparatuses and the like in recent years, there  
is a tendency of increases in high-frequency noises, as  
the so-called in-apparatus noises.

Those AV apparatuses which incorporate a radio  
tuner have been wide spread. Where such an AV apparatus

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an AM antenna device according to a third embodiment of the present invention.

A-4D

FIGS. 4<sub>A</sub> shows assembly steps of a loop antenna portion in the AM antenna device according to the third embodiment.

FIGS. 5A and 5B show an exemplary configuration of a loop antenna having a shield structure.

FIG. 6 schematically illustrates the principle of the reception of disturbance noise by an antenna.

#### Best Mode for Carrying out the Invention

Now, embodiments of the present invention will be sequentially described below. This embodiment will be described by taking as an example the case where the loop antenna is an AM antenna device corresponding to AM broadcasting.

Here, in the case where a countermeasure against noises is applied to a loop antenna type AM antenna, a configuration as shown in FIGS. 5A and 5B may be contemplated.

FIG. 5A is a view, from the front side, of an AM antenna device 1A, and FIG. 5B shows a sectional view along line A-A of FIG. 5A.

As shown in FIGS. 5A and 5B, the AM antenna device

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